

Application Serial No. 16,29,694  
Reply to Office Action of January 21, 2005

PATENT  
Docket: CU-3477

### **REMARKS/ARGUMENTS**

Reconsideration is respectfully requested.

The Specification has been amended to correct an inadvertent typographical error. The reference numeral 320 appearing on FIG. 4 has been inserted in the appropriate paragraph. No new matter has been added.

Drawings stand objected to for containing reference numerals 251 and 252 referencing a second contact hole. In response, the Specification page 10, lines 9-13 have been amended to clarify the difference between the second contact hole 250 and the same contact hole 251 as shown in FIGS. 3D-3E and described in the Specification page 9, line 21 to page 10, line 18. On this ground, withdrawal of the objection to drawings is respectfully requested.

Claims 1-7 are pending in the present application before this amendment. By the present amendment, Claims 1-2 have been amended. No new matter has been added.

Claims 1-7 stand objected to for containing informalities.

As to Claim 1, the term "certain" has been deleted. Claim 1 has been also amended to recite that a dielectric film (such as FIGS. 3H-4, element 280) is formed on the storage node electrode (such as element 160) and that a plate electrode (such as 300) is formed on the dielectric film (such as 280) and the silicon nitride film (such as 200).

As to Claim 2, the claim has been amended to recite that a silicon nitride film (such as FIG. 4, element 320) is formed at least on the inter layer insulating film (such

Application Serial No. 10,29,694  
Reply to Office Action of January 21, 2005

PATENT  
Docket: CU-3477

as 140) before forming the first insulating film (such as 180).

Claims 1-4 and 6-7 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,548,853 (Hwang). The "et al." suffix, which may appear after a reference name, is omitted in this paper.

Applicants respectfully disagree with the Office Action. One of the many prior art problems solved by the presently claimed invention is that the storage node 35 (as in FIG. 2, element 35) tilts to an adjacent storage node when a cleaning process or others is performed on the storage node (also see Specification page 4, lines 14-19).

FIGS. 3H and 4 of the present application shows the embodiments of the present invention that solves the prior art problems including the above. As shown, the silicon nitride film 200 is formed as an etch barrier above the first insulating film 180. The recessed portion 180a (FIG. 3E) is formed in the first insulating film 180 using the silicon nitride film 200 as the barrier, and this allows the storage node 260 to be formed on the bottom area "A" below the silicon nitride layer 200 as shown in FIG. 3G. Here, the storage node electrode 260 is securely anchored below the silicon nitride film 200 and this unique and novel structure of the claimed invention prevents the tilting phenomenon of the prior art (see Specification page 11, lines 2-11) as well as increasing the capacitance.

To clarify this aspect of the present invention, Claim 1 has been amended to recite: —forming a recessed portion at side surfaces of the second contact hole and below the silicon nitride film by wet-etching the first insulating film remained in the second contact hole—.

Application Serial No. 10/29,694  
Reply to Office Action of January 21, 2005

PATENT  
Docket: CU-3477

Hwang does not teach, inter alia, this feature of the claimed invention.

As shown in FIGS. 1 and 2E of Hwang, Hwang very clearly fails to teach or disclose the claimed --recessed portion-- such as the bottom area "A" as shown in the embodiment of FIG. 3G of the present invention.

Hwang teaches etching two different layers where the bottom layer has a faster etching rate (i.e., the molding layer 216 in FIG. 2A has faster etch rate than the molding layer 218, allowing the formation of the "undercut region 216a" as shown in FIG. 2C. When the molding layers of Hwang have been removed as shown in FIG. 2E, the "cylindrical storage node 225" is **completely exposed**. This presents the same problem of the prior art described in the Background of the present application and with respect to FIG. 2. Nowhere in Hwang discloses or teaches, inter alia, the claimed --recessed portion-- as claimed in Claim 1 and an embodiment of which is shown with respect to FIG. 3G. Hwang simply does not teach the structure of the presently claimed invention, such as those shown in FIGS. 3G, 3H, and 4 where the bottom area A of the storage node electrode 260 securely holds the storage electric node 260 from tilting while providing increased capacitance.

Further, Applicants respectfully also submit that all of the other cited references, the U.S. Patent Reference Nos. 2003/0162353 (Park); 2003/0215983 (Bae); 6,285,053 (Park); 6,403,431 (Chung); 2002/0058379 (Sano); 2004/0000684 (Park); 2003/0235948 (Park); 6,730,956 (Bae); 6,548,348 (Ni); 6,483,141 (Sano); and 6,759,704 (Park), fails to teach or suggest Claim 1.

For the reasons set forth above, Applicants respectfully submit that Claims 1-7, pending in this application, are in condition for allowance over the cited reference. This

Application Serial No. 10, 29,694  
Reply to Office Action of January 21, 2005

PATENT  
Docket: CU-3477

amendment is considered to be responsive to all points raised in the Office Action.  
Accordingly, Applicants respectfully request reconsideration and withdrawal of the  
outstanding rejections and earnestly solicit an indication of allowable subject matter.

Should the Examiner have any remaining questions or concerns, the Examiner is  
encouraged to contact the undersigned attorney by telephone to expeditiously resolve  
such concerns.

Respectfully submitted,



Dated: April 15, 2005

---

W. William Park, Reg. No. 55,523  
Ladas & Parry  
224 South Michigan Avenue  
Chicago, Illinois 60604  
(312) 427-1300